

AMENDMENTS TO THE CLAIMS:

CLAIM LISTING

This listing of claims will replace all prior versions and listings of claims in the application:

1-22. (cancelled)

23. (currently amended) An immunogenic, HIV-1 Env peptide ~~of 5-150 amino acid~~ comprising residues of LAV_{MAL} Env sequences in Figures 3E-3F comprising amino acids from the following conserved sequences: positions 37-130, 211-289, 488-530, 490-620, and 680-700 of Env as shown in Figures 3E-3F,

having at least one amino acid substitution at one or more of positions 8, 9, 90, 102, 131, 133, 140, 156, 172, 177, 179, 185, 188, 192, 198, 207, 209, 290, 305, 308, 323, 333, 335, 337, 341, 342, 353, 356, 359, 363, 404, 428, 440, 457, ~~41~~ 461, 477, 483, 484, 486, 538, 555, 641, 652, 656, 660, 663, 694, 740, 733, 799, 854, 856, 862, and 875 with an amino acid from the same position ~~in relation to Env sequences~~ one of LAV_{BRU}, LAV_{ARV2}, and LAV_{ELI} as shown in Figures 3E-3F;

and wherein said peptide binds to antibodies in AIDS patient sera; and wherein said antibodies are capable of binding to viral antigens encoded by the LAV_{MAL} molecular clone having C.N.C.M. accession number I-641.

24. (previously presented) The peptide of claim 23, wherein said peptide is generated by chemical cleavage.

25. (previously presented) The peptide of claim 23, wherein said peptide is expressed from a recombinant DNA.

26. (previously presented) The peptide of claim 23, wherein said peptide is generated by chemical synthesis.

27. (previously presented) A method for detecting antibodies to HIV in a test sample comprising:

- a) providing at least one peptide of claim 23 affixed to a solid support;
- b) combining a test sample with the at least one peptide affixed to the solid support;
- c) optionally rinsing the solid support to remove unbound antibodies of the test sample; and
- d) detecting peptide-antibody complex formed, which is indicative of the presence of HIV antibodies in the test sample.

28. (previously presented) A method of eliciting neutralizing antibodies to HIV in a mammal comprising:

- a) providing a composition comprising at least one peptide of claim 23, a suitable pharmaceutically or physiologically acceptable carrier, and optionally an adjuvant;
- b) immunizing the mammal with the composition; and
- c) optionally testing a blood sample from the mammal to assay for the binding affinity and neutralizing activity of the elicited antibodies.

29-31. (cancelled)

32. (previously presented) A method for detecting antibodies to HIV in a test sample comprising:

- a) providing at least one peptide of claim 31 affixed to a solid support;
- b) combining a test sample with the at least one peptide affixed to the solid support;
- c) optionally rinsing the solid support to remove unbound antibodies of the test sample; and
- d) detecting peptide-antibody complex formed, which is indicative of the presence of HIV antibodies in the test sample.

33. (previously presented) A method of eliciting neutralizing antibodies to HIV in a mammal comprising:

- a) preparing a vaccine comprising at least one peptide of claim 31, a suitable pharmaceutically or physiologically acceptable carrier, and optionally an adjuvant;
- b) immunizing the mammal with the vaccine; and
- c) optionally testing a blood sample from the mammal to assay for the binding affinity and neutralizing activity of the elicited antibodies.

34. (currently amended) An immunogenic, HIV-1 Env peptide of at least 21 amino acid comprising residues of LAV_{MAL} Env sequences in Figures 3E-3F comprising

amino acids from 34-530 as shown in Figures 3E-3F

having at least one amino acid substitution consisting of an amino acid substitution at one or more of positions 8, 9, 90, 102, 131, 133, 140, 156, 172, 177, 179, 185, 188, 192, 198, 207, 209, 290, 305, 308, 323, 333, 335, 337, 341, 342, 353, 356, 359, 363, 404, 428, 440, 457, ~~44~~ 461, 477, 483, 484, 486, 538, and 555, 641, 652, 656, 660, 663, 694, 740, 733, 799, 854, 856, 862, 875 with an amino acid from the same position in one of LAV_{BRU}, LAV_{ARV2}, and LAV_{ELI} as shown in Figures 3E-3F;

wherein said peptide binds to antibodies in AIDS patient sera; and wherein said antibodies are capable of binding to viral antigens encoded by the LAV_{MAL} molecular clone having C.N.C.M. accession number I-641.

35. (currently amended) The peptide of claim 34, wherein the peptide comprises amino acids from 34-530 as shown in Figures 3E-3F before the at least one amino acid substitution ~~has 21 amino acids.~~

36-50. (cancelled)